Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of:	)	
	)	
Request of Waver of Part 80	)	WT Docket No. 12-176
To Allow Certification and Use	)	
Seareka Maritime Survivor	)	
Locating Device operating	)	
On Frequency 869MHz.	)	

RESPONSE OF WHIFFLETREE CORPORATION AND SEAREKA MARITIME SURVIVOR LOCATING DEVICE (MSLD)

Whiffletree Corporation of Bridgton, Maine (Whiffletree)[1] /Seareka's response to AT&T, Verizon, Sprint Nextel objection to Waiver.

This document responds purposefully to the concerns and objections of AT&T, Verizon and Sprint Nextel companies to Seareka's request for waiver.

Use of 406 Frequency Currently Approved for EPIRB Use

AT&T, Verizon and Sprint Nextel argue that the 406 MHz spectrum, currently serving as a worldwide distress frequency for vessels in trouble, should be used exclusively for maritime SOS applications and that new maritime safety applications should be forced into this spectrum. This COSPAS/SARSAT system, using Emergency Position Indicating Radio Beacons (EPIRBs) relies exclusively on a satellite network and satellite communications to national maritime emergency response networks around the world. EPIRB's have proven highly successful in bringing rescue services to ships in distress, and many lives have been saved.

[1] Whiffletree exclusively represents Seareka Maritime Survivor Locating Device in the U.S. and North America for marketing and distribution.

Seareka's MSLD is intended to complement the safety network of deployed EPIRB's by providing a local network of safety devices and communications that allow retrieval and survival of individuals lost at sea from their vessels due to bad weather or mishaps. Here the response time of the crew and the vessel is critical. In many instances a victim's survival depends on a response that occurs in the first few minutes, if not seconds. Normal rescue organization responses to EPIRB signals can be several minutes and sometimes hours depending on the location of the boat to shore, weather, and the location and availability of resources.

The Seareka MSLD is intended to save individual lives at sea by immediate, local action. In most cases there is not time to utilize a worldwide satellite network and the emergency services of the Coast Guards of the United States or the nearest cooperating nation to save the individual, especially in heavy seas when individuals can be unknowingly lost overboard. According to GlobalSecurity.org:

> Time is of the essence. The ship's response to the situation is critical. Table 18-1 gives you an estimate of survival times in various water temperatures. This table is only a guideline to emphasize the need for fast action and not a means of setting an arbitrary limit on the search effort.

Table 18-1. Survival Times in the Water

Water temperature		Survival time (Average duration)
Centigrade	**Fahrenheit**	
Less than 2°	Less than 34°	Less than 45 minutes
2°to 4°	34°to 40°	Less than 90 minutes
4°to 10°	40°to 50°	Less than 3 hours
10°to 15°	50°to 59°	Less than 6 hours

Water temperature		Survival time (Average duration)
Centigrade	**Fahrenheit**	
15°to 20°	59°to 69°	Less than 12 hours
Greater than 20°	Greater than 70°	Indefinite (depen ds on physical condition)

http://www.globalsecurity.org/military/library/policy/army/fm/55-501/chap18.htm

Seareka's system allows ships to pinpoint the exact location of the MOB therefore providing a means to shorten the amount of time necessary to locate and rescue their crew member. In severe weather, this would also help rescue agencies whose resources may be taxed by several emergencies at once.

Non-compliance with 47 CFR §§ 15

AT&T focuses some of its objections on the non-compliance of Seareka's system relative to Title 47 of the Code of Federal Regulations (CFR) Part 15.

In reviewing 47 CFR Part 15, Seareka's system meets the criteria of Section 15.231(a)(4) that authorizes transmission of emergency alarms with no time limit required for the alarm:

> (4) Intentional radiators which are employed for control purposes during emergencies involving the security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition.

The Seareka system also complies with Section 15.231(c) which calls for a bandwidth limitation of 0.25% of the center frequency, or (869 * .0025) 2 MHz.

Seareka understands that the currently authorized maximum allowable power to the antenna from the transmitter under Section 15.231(b) is 12500μv/m at 3m (-13dBm). Part of the request for waiver is the ability to use a boat antenna that emits up to 27 dBm and a beacon antenna that

emits up to 20 dBm. Seareka recognizes that these powers are well above the current limit. **However, it is of utmost importance to consider that under normal conditions, the antenna and the beacon emit no radio signal. It is only when a Man Overboard (MOB) is activated that the device transmits its alarm and position to the boat. The frequency is used only in emergency situations and only to save one or more human lives.**

Because of the necessary additional power being requested, the power of these devices is modulated in time and power to manage the affect of false alarms (0dBm +10 dBm), the unit then moves to 27 dBm if the MOB has not been recovered in five minutes.

Interference from Cellular Equipment with the MSLD

As for the sensitivity of the antenna to boat equipment in the GSM frequency band, the Seareka has two receivers, including a narrow band receiver with a Class 1 block of 92db +/-2 MHz. Consequently a GSM broadband transmit close to the frequency of use would reduce the range of the Seareka system between the MOB beacon and the ship, but would not cause a failure of the system.

We are not requesting or suggesting the necessity for full time use of the frequency. The Seareka beacon emits an alarm in less than five seconds following the detection of a MOB emergency. The emergency transmission broadcast only for 150 milliseconds every 20 seconds. It is by no means a permanent use of the frequency that is requested.

By definition, a man overboard is initially close to the vessel from which he came. Therefore, the power ratio between a GSM cell and the Seareka Beacon is greatly affected by the relative distance between the MOB and the ship's antenna, which is equally as important as the power ratio.

The Seareka MOB system is critical to saving lives in MOB emergencies. It is the fastest system in existence for raising the MOB alarm and alerting the ship's crew to slow, turn or stop engines, and initiate a safe recovery of the victim. This short time frame is critical to increasing the chances of survival of the MOB victim.

During an alarm, the system will communicate initially in low power radio mode, as the MOB is presumed to be close to the ship. After five minutes, and if the MOB is not recovered and the alarm stopped, the beacon transmits at maximum power (500mW), and communication elements of the boat can be operated automatically. These features of the Seareka MOB system minimize the risk and impact of false alarms.

Seareka's system can also simultaneously manage Multiple MOB emergencies.

MSLDs Create an Immediate Emergency Response System

Seareka MOB is operational worldwide, near the coast or offshore. It does not rely on satellite communications to alert rescuers. Each ship becomes a private network and establishes its own safety network. In the event of an emergency, other nearby ships can join the network if they are equipped with Seareka equipment, thus improving the chances of survival of MOB victims.

The innovative Seareka private network allows calibrating the GPS beacon very quickly as a "hot start", which is especially needed in poor weather conditions. The position accuracy of the Man Overboard beacon is within 5 meters, and is updated every 15 to 20 seconds. No subscription is needed for a satellite constellation, and the system is secure. The technology used is, "listen before talking."

The frequency of 868 MHz was chosen for two reasons: First, the frequency is open and free in the rest of the world outside the U.S. and within the U.S.; it is used for a similar reason which is to alert emergency personnel. Second, the 868MHz frequency uses the optimal combination of antenna size and power to operate effectively from inside a Seareka life vest on the water.

Acceptance Abroad and Current Usage

Seareka's system has been approved for use on this frequency in many European Countries and by the Bureau Veritas. Approval of the Seareka system by ATEX is currently pending.

Currently, many internationally flagged ships are equipped with the Seareka MOB system including some that operate close to the U.S. coast or frequent U.S. Ports. By granting this waiver, the FCC will grant U.S.-based vessels the opportunity for the same safety and protection of human life at sea afforded ships of other nations around the world.

Testing of the Seareka System

Seareka understands that there currently exist several questions regarding the interference of the system with cellular networks and the interference of the systems from cellular networks. Seareka is willing to submit the unit for testing by an independent external organization to make such a determination.

Whiffletree/Seareka recognize the accomplishments of the FCC to provide additional benefits to the American people by broadening the use of 800 MHz bandwidth through waivers as it did under WT Docket No. 12-64 (FCC Document 12-55, Statement of Chairman Julius Genachowski). We encourage the FCC to continue this by providing room for this localized emergency response system.

Respectfully submitted,

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